RF Exposure Evaluation Declaration

FCC ID	:	2AOE2REX3B
APPLICANT	:	Zhejiang Raying IoT Technology Co., Ltd.

Application Type	:	Certification
Product	:	2.4G Zigbee Module
Model No.	:	REX3B
FCC Classification	:	Digital Transmission System (DTS)

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The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.
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Revision History

Report No.	Version	Description	Issue Date	Note
1803WSU014-U2	Rev. 01	Initial report	05-23-2018	Invalid
1803WSU014-U2	Rev. 02	Change applicant and manufacturer information	06-05-2018	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	2.4G Zigbee Module
Model No.	REX3B
Frequency Range	802.15.4: 2405 ~ 2480 MHz
Type of Modulation	O-QPSK
Date Rate	250kbps
Type of Antenna	PCB Antenna

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	2.4G Zigbee Module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
Zigbee	2402 ~ 2480	19.41	0.0174	1

CONCULISON:

The max Power Density at R (20 cm) = 0.0174mW/cm^2 < 1 mW/cm^2 for Bluetooth.

Therefore, the Min Safety Distance is 20cm.

The End